

### **REMARKS/ARGUMENTS**

In view of the foregoing amendments and following remarks, favorable reconsideration of the claims is respectfully requested.

Claims 1 – 5, 7 – 10, 26, and 27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 6,585,842 to Bompard, U.S. Patent No. 5,439,627 to De Jager, and U.S. Patent No. 5,273,821 to Olson et al.

Olson describes a ceramic fiber board having a polyvinyl alcohol (PVA) binder that dissolves when heated and has a density that is less than 22 lb/ft<sup>3</sup>. Intended uses for Olson's fiber boards include high temperature insulation applications such as steel splash boards, oven or furnace linings, casting setters or casting tips. Bompard on the other hand, describes a composite sheet material that is useful for making fiber reinforced material parts, such as boat masts. Bompard is not directed to insulative fiber boards or insulative applications. As a direct consequence, the sheet material in Bompard would necessarily have a relatively high density because of the amount of fibers that are needed in the sheet material in order to be useful for its intended purpose. Accordingly, the sheet material of Bompard would not have the density ranges disclosed in Olson, let alone the recited density because, there would be no purpose in modifying the sheet material to have a density that is less than 22 lb/ft<sup>3</sup> as contemplated by the Examiner since Bompard is directed to "composite material parts" and not to insulative applications.

Further, Bompard teaches that its composite sheet material comprises filaments that are arranged in tows having from 12K to 480K filaments in each tow. See column 4, lines 41- 47. Bompard also teaches that the tows are "relatively heavy". See column 5, lines 16 – 17. Although, the Examples are generally directed carbon fiber tows, it is readily apparent that Bompard teaches a composite sheet that is relatively dense and heavy. For example, typical carbon fiber tows, such as those available from Toray or Hexcel, have a density of about 1.80 g/cm<sup>3</sup> (112 lbs./ft<sup>3</sup>), which is significantly higher than the recited density or the density recited in Olson. Even assuming 50% of the composite sheet comprises binder, the density is still significantly higher than the recited density range. From these densities and the intended use of Bompard's sheet material, it does not make sense that one would modify the sheet material of

Bompard to have a density less than 22 lb/ft<sup>3</sup>. In fact, it is reasonable to assume that such a density would make the sheet material of Bompard unsatisfactory for its intended purpose because lowering the density would result in a change in the strength to weight ratio of Bompard's sheet material. As a result, one of ordinary skill in the art would not be motivated to modify the sheet material of Bompard to have a density that is between 5 lbs/ft<sup>3</sup> and about 24 lbs/ft<sup>3</sup>.

Finally, in making the rejection, the Examiner has taken Official Notice that PVA and water soluble methyl cellulose are equivalent to each other because both can be used as a binder. However, it is only proper to take Official Notice where the facts asserted to be well known "are capable of such instant and unquestionable demonstration as being well known." (See MPEP 2144.03, quoting *In re Ahlert*, 424 F.2d 1088, 1091 (CCPA 1970)). Contrary to the Examiner's assertions, one of ordinary skill in the art would not consider PVA and methyl cellulose to be equivalent for several reasons. First, PVA and methyl cellulose are completely different from each other chemically; they each comprise a distinct chemical composition and as a result have very different chemical properties. In particular, PVA does not have reverse thermal gelation properties, whereas Claim 1 recites a binder having such properties. Accordingly, there is no factual basis that supports the Examiner taking Official Notice that PVA and water soluble methyl cellulose are equivalent to each other, and one of ordinary skill in the art would not recognize the two as being equivalent to each other.

Further, the Examiner's reasoning for taking Official Notice does not meet the standard set forth by the Federal Circuit and its predecessor court, the C.C.P.A. There is absolutely no basis for the assertion that the since both PVA and methyl cellulose are binders they are capable of being instantly and unquestionably demonstrated as being equivalent to each other. Moreover, the fact that two items can be generically described as having a similar use does not mean that they are equivalent. If the Examiner's reasoning was broadly applied, one could argue that diamond and steel are equivalent to each other because both have found usage in drill bits. However, common sense dictates that these two substances are drastically different from each other and are therefore not equivalent. Similarly, PVA and methyl cellulose are significantly different and also cannot be considered equivalent to each other. Accordingly, PVA and methyl

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cellulose cannot be considered equivalent and it is therefore respectfully requested that the Examiner withdraw the Official Notice to such. Accordingly, one of ordinary skill in the art would not be motivated to substitute the PVA binder of Bompard with the methyl cellulose binder of De Jager.

In view of the foregoing amendments and remarks, it is respectfully submitted that the rejections under 35 U.S.C. § 103 have been overcome.

### **Conclusion**

In view of the amendments and remarks made above, Applicant submits that the pending claims are in condition for allowance. Applicant respectfully requests that the claims be allowed to issue. If the Examiner wishes to discuss the application or the comments herein, the Examiner is urged to contact the undersigned attorney by telephone at 704-444-1185 to expedite prosecution of this application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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